AF/3671 ehe IFW

612.37981CX1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: F. BIOLLEY

Serial No.: 09/471,501

Filed: December 23, 1999

For: Hybrid Riser Or Pipe For Fluid Transfer

Group: 3671

Examiner: A. Pechhold

APPELLANT'S BRIEF

Mail Stop: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

July 30, 2004

Sir:

This brief is being submitted in triplicate under 37 CFR 1.192 in connection with the appeal of the above-identified application, a notice of appeal having been filed June 7, 2004.

REAL PARTY IN INTEREST

The real party in interest is Institut Francais du Petrole of Cedex, France.

RELATED APPEALS AND INTERFERENCES

On information and belief, there is no other appeal or interference known to appellant, appellant's legal representative, or assignee which will directly affect

or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 1 - 5, 8 and 10 have been canceled, leaving claims 6, 7, 9 and 11 - 20 pending. Claims 13 - 16 have been allowed. Claims 6, 7, 9, 11, 12 and 17 - 20 stand finally rejected and are on appeal.

STATUS OF AMENDMENTS

Although a Request for Reconsideration After Final Rejection was filed April 27, 2004 and considered by the Examiner (see the Advisory Action mailed May 25, 2004), no amendment has been filed subsequent to the final rejection of February 6, 2004, from which appeal is taken.

However, the present application is a continuation (continued prosecution application) of prior Application No. 09/471,501, filed December 23, 1999. In the parent application, an amendment after final rejection was filed October 1, 2001 and was not entered by the Examiner (see the Advisory Action mailed October 22, 2001). However, the amendment was entered upon filing of the continued prosecution application on November 13, 2001. Also, subsequent to the filing of the continued prosecution application, a final rejection was mailed September 20, 2002, in response to which, appellant filed an Amendment and Request for Continued Examination on December 19, 2002. That Amendment was entered. Subsequently, a final rejection was issued April 1, 2003. An Amendment After

Rejection and a Supplemental Amendment After Final Rejection were filed May 27 and June 20, 2003, respectively. While initially unentered, a second request for Continued Examination was filed July 31, 2003, requesting entry of these amendments. These amendments were entered.

SUMMARY OF THE INVENTION

The claims on appeal relate to a pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface, and to a system for producing petroleum effluents in great water depths allowing fluid transfer between a floating support and a source of effluence. See, e.g., independent claims 9, 11 and 17 and page 1, lines 2 - 12 of appellant's specification.

The pipe and system of the present invention is shown, by way of example only, in, e.g., Figures 1A, 1B and 6. The system comprises one or more risers and/or one or more injection lines, wherein each of the one or more risers and/or one or more injection lines is a pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface. See, e.g., page 7, lines 9 - 14 of appellant's specification.

The pipe of the present invention and the pipe which forms part of the system of the present invention is shown, by way of example only, in Figure 1B. As shown therein, the pipe allows transfer of a fluid between a floating support (1) and a point located below and at a distance from the water surface. The pipe

includes a continuously flexible riser part (7) connected, at one end, to the point located below the surface, and a rigid riser part (6) connected to the flexible riser part at one end and to the floating support (1) of the second end thereof. The rigid riser part (6) has a length at least equal to half the water depth. The pipe further comprises a catenary anchor system (10) applied to the rigid riser part in the vicinity of a junction between the flexible riser part (7) and rigid riser part (6) and/or in the vicinity of a connector (8) between the flexible riser part (7) and the rigid riser (6) and anchored to the sea bottom (2). See, e.g., Figure 1B and page 9, line 19 to page 11, line 6 of appellant's specification.

ISSUES

Whether claims 7, 9, 11, 12, 17, 19 and 20 are patentable under 35 USC 103(a) over United States Patent No. 4,279,543 to Remery in view of United States Patent No. 5,505,560 to Brown et al.

Whether claims 6 and 18 are patentable under 35 USC 103(a) over Remery and Brown et al and further in view of European Patent Application Publication No. 0 467 635 to Willis.

GROUPING OF CLAIMS

With respect to the rejection of claims 7, 9, 11, 12, 17, 19 and 20 under 35 USC 103(a) over Remery and Brown et al, the claims do not stand or fall together, i.e., appellant believes the claims to be separately patentable for the reasons set forth hereinafter.

With respect to the rejection of claims 6 and 18 under 35 USC 103(a) over Remery and Brown et al and further in view of Willis, the claims do not stand or fall together, i.e., appellant believes the claims to be separately patentable for the reasons provided hereinafter.

ARGUMENTS

Claims 7, 9, 11, 12, 17, 19 and 20 are patentable under 35 USC 103(a) over Remery in view of Brown et al.

The Remery patent relates to a device for conveying a medium comprising a buoy 1, a pipe 3 fastened to the buoy 1, and a flexible tube 6 connected to the lower end of the pipe 3, the other end of the flexible tube 6 being connected to a means 7 provided in a fixed position on the bottom 9. As admitted by the Examiner, in contrast to the present invention, the lower end of the pipe 3 is not anchored by a catenary anchor system.

As mentioned in appellant's specification at page 11, lines 1 to 6, the centenary anchor system allows to anchor the bottom of the rigid pipe on the seabed in order to essentially limit the horizontal motions at the bottom of the rigid pipe.

The aim of the invention presented in the document Remery is to avoid that the "tube may be bent and/or twisted and be loaded with an additional tractive force" (see column 1, lines 22 and 23). By anchoring the lower end of the rigid part to the sea bed, the present invention is not compatible with the aforesaid aim. The anchoring means will create stresses by limiting motion of

the lower end of the rigid part. Anchoring the lower part of the pipe 3 goes against the aim of the teaching of the patent to Remery by anchoring the lower part of the pipe 3. In particular, one skilled in the art would have been dissuaded from using the teaching of the Brown et al patent to modify the device disclosed by Remery.

Further, the Brown et al document concerns a fluid transfer system for an offshore moored floating unit. The fluid line of the fluid transfer system of Brown et al is clearly flexible; see the drawing which shows a line referenced 5 and 6 which is bent, and the description at column 1, line 19: "a fluid line is used which has a wave shape", and the description at column 2, lines 21 and 29; i.e., "upper catenary 5 comprises a flexible fluid line" and "lower portion 6 also comprises a flexible fluid line". Therefore, the teaching of the Brown et al patent, which concerns only flexible pipe, is far away from the teaching of Remery, which concerns the assembly of a rigid riser part and a flexible riser part, and is far away from the present invention which concerns a specific arrangement of a rigid riser part and a flexible riser part. Therefore, one skilled in the art can not use the teaching of Brown et al in order to obtain the present invention. Further, by this difference, one skilled in the art would not have been motivated to combine the teachings of these documents.

Moreover, the subsurface buoy 7 of the Brown et al patent, connected through line 10 with a clump weight 11 positioned on the seabed 3, is clearly different from the catenary anchor system of our invention. The clump weight 11 only keeps the buoyancy body 9 on the seabed (see column 1, lines 49 to 54

and column 2, lines 26 to 28). Further, according to Brown et al, column 2, lines 44 and 45, "the line 10 can be displaced from the vertical position up to 45°". Therefore, the line 10 does not anchor the pipe and does not perform the function of limiting horizontal motions at the bottom of the rigid pipe as the catenary anchor system of the present invention.

Further, the Remery and Brown et al patents do not contain any positive motivation for one of ordinary skill in the art in order to modify the teachings of Remery with the teachings of the Brown et al patent.

Absent some teaching in the prior art or knowledge generally available to one of ordinary skill in the art, it is submitted it would not have been obvious to combine the teachings of Remery and Brown et al in the manner urged by the Examiner. Thus, the modifications of Remery et al urged by the Examiner are merely a hindsight reconstruction of the present invention based on the teachings in applicant's specification.

Thus, the combination of Remery and Brown et al does not disclose and would not have suggested the pipe set forth in independent claim 9, i.e., a pipe which is an injection pipe or line characterized in that the rigid riser part is connected to a source of fluid to be injected and the flexible riser part is connected to a point where the fluid is to be injected, and including a catenary anchor system applied to the rigid riser part in the vicinity of a junction between the flexible riser part and the rigid riser part or in the vicinity of a connector between the flexible riser part and the rigid riser part, the catenary anchor

system comprising one or more tendons anchored to a sea bottom.

The combination of Remery and Brown et al also would not have suggested the system for producing petroleum effluents in great water depths allowing fluid transfer between a floating support and a source of effluents, as set forth in independent claim 11, in which the system comprises at least one or more risers and/or one or more injection lines, and wherein each of the one or more risers and/or one or more injection lines is a pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface and wherein it comprises a catenary anchor system applied to the rigid riser part in the vicinity of a junction between the flexible riser part and the rigid riser part and/or in the vicinity of a connector between the flexible riser part and the rigid riser part and anchored to a sea bottom.

The combination of Remery and Brown et al also would not have suggested the system set forth in claim 7, including, inter alia, wherein at least one of the one or more risers is characterized in that the rigid riser part is held up to the floating support by holding means allowing the pipe to be tensioned under the effect of its own weight.

The combination of Remery and Brown et al also would not have suggested the system set forth in claim 12, including additional means for tensioning the riser(s).

The combination of Remery and Brown et al would not have suggested the pipe set forth in independent claim 17, including at least one flexible riser

part, at least one rigid riser part and a catenary anchor system applied to the rigid riser part in the vicinity of a junction between the flexible riser part and the rigid riser part or in the vicinity of a connector between the flexible riser part and the rigid riser part, the catenary anchor system comprising one or more tendons anchored to a sea bottom.

The combination of Remery and Brown et al also would not have suggested the pipe set forth in claim 19, including that the rigid riser part is held up to the floating support by holding means allowing the pipe to be tensioned under the effect of its own weight.

The combination of Remery and Brown et al also would not have suggested the pipe set forth in claim 20, wherein the pipe is an injection pipe or line and wherein the rigid riser part is connected to a source of fluid to be injected and the flexible riser part is connected to a point where the fluid is to be injected.

Claims 6 and 18 are patentable over Remery and Brown et al and further in view of Willis.

The teachings of Willis also do not remedy any of the deficiencies of the proposed combination of Remery and Brown et al.

The Willis document discloses a thermally insulating composition and method of insulating pipe line bundles and pipe line riser caissons. Clearly nothing in Willis would have suggested modifying Remery to provide the catenary anchor system presently claimed. Accordingly, claims 6 and 18 are patentable over the proposed combination of Remery and Willis.

That is, the combination of Remery, Brown et al and Willis would not have suggested the system set forth in claim 6, including a catenary anchor system applied to the rigid part in the vicinity of a junction between the flexible riser part and the rigid riser part, and/or in the vicinity of a connector between the flexible riser part and the rigid riser part and anchored sea bottom, wherein at least one of the one or more risers further comprises heat insulation means placed on at least the rigid riser part and/or the flexible riser part.

The combination of Remery, Brown et al and Willis also would not have suggested the pipe set forth in claim 18, including at least one flexible riser part, at least one rigid riser part, a catenary anchor system applied to the rigid riser part in the vicinity of a junction between the flexible riser part and the rigid riser part or in the vicinity of a connector between the flexible riser part and the rigid riser part, the catenary anchor system comprising one or more tendons anchored to a sea bottom, and further comprising heat insulation means placed on at least the rigid riser part and/or the flexible riser part.

CONCLUSION

For the foregoing reasons, the final rejections should be reversed.

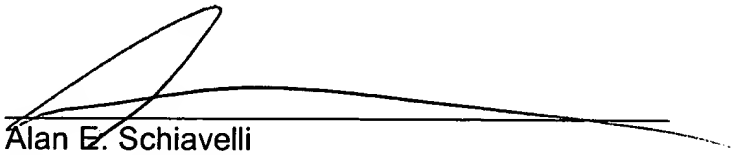
A copy of the claims on appeal, i.e., claims 6, 7, 9, 11, 12 and 17 - 20, is found in the attached appendix.

To the extent necessary, appellants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of

Antonelli, Terry, Stout & Kraus, Deposit Account No. 01-2135 (Case: 612.37981CX1), and please credit any excess fees to said deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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APPENDIX A

6. The system of Claim 11, wherein at least one of said one or more risers further comprises heat insulation means placed on at least the rigid riser part and/or the flexible riser part.

7. The system of Claim 11 wherein at least one of said one or more risers is characterized in that said rigid riser part is held up to the floating support by holding means (9) allowing said pipe to be tensioned under the effect of its own weight.

9. A pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface, characterized in that it comprises:

a continuously flexible riser part connected, at one end, to the point located below the surface, and

a rigid riser part connected to the flexible riser part at one end and to the floating support at the second end thereof,

said rigid riser part having a length at least equal to half the water depth, and

further including a catenary anchor system applied to the rigid riser part in the vicinity of a junction between the flexible riser part and the rigid riser part or in the vicinity of a connector between the flexible riser part and the rigid riser

part, the catenary anchor system comprising one or more tendons anchored to a sea bottom,

wherein the pipe is an injection pipe or line and characterized in that the rigid riser part is connected to a source of fluid to be injected and the flexible riser part is connected to a point where the fluid is to be injected.

11. A system for producing petroleum effluents in great water depths allowing fluid transfer between a floating support and a source of effluents, characterized in that the system comprises at least one or more risers and/or one or more injection lines, and wherein each of the one or more risers and/or one or more injection lines is a pipe for great water depths (D) allowing transfer of a fluid between a floating support (1) and a point located below and at a distance from the water surface, characterized in that it comprises:

a continuously flexible riser part (7) connected, at one end, to the point located below the surface, and

a rigid riser part (6) connected to the flexible riser part at one end and to the floating support at the second end thereof,

said rigid riser part (6) having a length at least equal to half the water depth,

further comprising a catenary anchor system (10)applied to the rigid riser part in the vicinity of a junction between flexible riser part (7) and rigid riser part (6) and/or in the vicinity of connector (8) between flexible riser part (7) and rigid riser part (6) and anchored to a sea bottom.

12. The system of Claim 11, further comprising additional means for tensioning the riser(s).

17. A pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface, characterized in that it comprises:

at least one flexible riser part connected, at one end, to the point located below the surface, and

at least one rigid riser part connected to the flexible riser part at one end and to the floating support at the second end thereof, said rigid riser part having a length at least equal to half the water depth, and

a catenary anchor system applied to the rigid riser part in the vicinity of a junction between the flexible riser part and the rigid riser part or in the vicinity of a connector between the flexible riser part and the rigid riser part, the catenary anchor system comprising one or more tendons anchored to a sea bottom.

18. The pipe of Claim 17, wherein said pipe further comprises heat insulation means placed on at least the rigid riser part and/or the flexible riser part.

19. The pipe of Claim 17 wherein said pipe is characterized in that said rigid riser part is held up to the floating support by holding means allowing said pipe to be tensioned under the effect of its own weight.

20. The pipe of Claim 17 wherein the pipe is an injection pipe or line and wherein the rigid riser part is connected to a source of fluid to be injected and the flexible riser part is connected to a point where the fluid is to be injected.